

Serial No. 09/707,815
Docket No. NEC DP-689
Amendment B

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 1, line 15, as follows:

Among image taking apparatuses, an electronic still camera, which displays an image taken by a solid state image taking device, such as a charge coupled device (CCD), on a displaying apparatus, such as a liquid crystal display (LCD), as a monitoring image, and also in which the image is recorded in a recording medium, such as a floppy disk or a memory card, has been rapidly and widely used in the market.

Please amend the paragraph beginning at page 1, line 20, as follows:

At the solid state image taking device used in the electronic still camera, a CCD having more than 2 million pixels has been ~~[[now]]~~ used mainly instead of the CCD having about 1.3 million pixels, and an electronic still camera provided a CCD having a large number of pixels has been rapidly developed.

Please amend the paragraph beginning at page 2, line 3, as follows:

In the near future, the electronic still camera will use a multifunction solid state image taking device, having ~~[[larger]]~~ large pixels, ~~and will become a multi-function, and will be that~~ used for various purposes. However, the power consumption ~~of the total system of the for~~ electronic still camera will be increased because of the larger number of pixels and the ~~multi~~ function multi-function capabilities of the camera.

Please amend the paragraph beginning at page 2, line 7, as follows:

~~In case that~~ If the number of pixels is increased, the electrode capacity of the solid state image taking device is increased. And, the driving frequency of the solid state image taking device may also increase in proportion to the increase of the number of pixels.

Serial No. 09/707,815
Docket No. NEC DP-689
Amendment B

Please amend the paragraph beginning at page 2, line 10, as follows:

As a result, the power consumption of a driving circuit for driving the solid state image taking device is increased, and the operating frequency of the total system of the electronic still camera is also increased. ~~[[,]] therefore~~ Therefore, the power consumption of the total system of the electronic still camera is increased.

Please amend the paragraph beginning at page 2, line 14, as follows:

~~Further, corresponding to~~ Because the multi-function of the electronic still camera has multi-functions, in addition to the displaying apparatus and the recording medium mentioned above, a TV set and/or a PC is connected to the total system of the electronic still camera. With ~~[[this]] these~~ additional devices ~~connection~~, the power consumption of the total system of the electronic still camera will be increased. Consequently, the battery life of the camera battery is decreased, and consequently the shooting time and the number of recording images is forced to decrease. Therefore, electronic still camera has many functions, these additional functions can not be used sufficiently.

Please amend the paragraph beginning at page 2, line 18, as follows:

~~Consequently, the life of a battery being a power source is decreased, and the shooting time is forced to decrease and the number of recording images is forced to decrease. Therefore, even the multi-function of the electronic still camera is achieved, the multi-function can not be used sufficiently.~~

Please amend the paragraph beginning at page 2, line 22, as follows:

Therefore, ~~at the development of~~ when the electronic still camera is developed, ~~in which~~ and the performance and the functions of the electronic still camera is must be studied, it is also

Serial No. 09/707,815
Docket No. NEC DP-689
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very important to reduce the power consumption of the total system of the electronic still camera. At the electronic still camera, the number of times displaying images such as monitoring images on the LCD is large, and further, the power consumption of the LCD is large. Therefore, in order to reduce the power consumption of the total system, it is very effective that the power consumption of the total system is decreased at the time when the image is displayed on the LCD.

Please amend the paragraph beginning at page 3, line 7, as follows:

These conventional technologies, in which the power consumption of the total system of the electronic still camera at the time displaying the image on the LCD is reduced, are explained below.

Please amend the paragraph beginning at page 3, line 19, as follows:

At this conventional electronic still camera, the compression rate of image data of an image to be taken at the image taking circuit 501 is set beforehand at the compression rate setting switch 506. After the compression rate is set ~~this setting~~, the image data ~~are started to take~~ are collected at the image taking circuit 501. In this, the compression rate of the image data corresponds to the image quality of the image, i.e., the higher the compression rate is, the worse the image quality ~~of the image is~~.

Please amend the paragraph beginning at page 4, line 14, as follows:

[[At this]] In conventional electronic still camera having the structure mentioned above, ~~in case that~~ when the image data stored in the image information memory 504 is compressed by a compression rate that is lower than a normal compression rate, the amount of light controlling circuit 507 controls so that the amount of light of the back-light 510 becomes lighter than

Serial No. 09/707,815
Docket No. NEC DP-689
Amendment B

normal light. And, when ~~in case that~~ the image data stored in the image information memory 504 is compressed by a compression rate that is higher than the normal compression rate, the amount of light controlling circuit 507 ~~controls~~ operates so that the amount of light of the back-light 510 becomes darker than the normal light.

Please amend the paragraph beginning at page 4, line 22, as follows:

~~That is, at this~~ In other words, in the conventional electronic still camera, ~~in case that~~ when an image data whose image quality is low is displayed on the LCD monitor 509, the amount of light of the back-light 510 is controlled to be darker than the normal light. With this, the power consumption of the total system is reduced.

Please amend the paragraph beginning at page 5, line 14, as follows:

[[At this]] In the conventional electronic still camera having the structure mentioned above, ~~in case that~~ when it is judged that a photographer is operating the input switches 608, 609, and 610 base on the counted number at the timer 606, the controller 604 judges that the photographer is not watching the LCD 602 attentively, and controls so that the amount of light of the back-light 603 for the LCD 602 becomes dark.

Please amend the paragraph beginning at page 5, line 19, as follows:

That is, at this conventional electronic still camera, when the image is displayed on the LCD 602, ~~in case that~~ when the photographer is setting the conditions [[at]] of taking or reproducing images, the amount of the back-light 603 is controlled to become dark. ~~With this,~~ Thus, the power consumption of the total system is reduced.

Please amend the paragraph beginning at page 8, line 16, as follows:

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Serial No. 09/707,815
Docket No. NEC DP-689
Amendment B

At ~~[[this]]~~ the monitor controlling apparatus for the electronic still camera, the operation of the CDS 815, the A/D converter 816, the pulse gate circuit 817, and the frequency divider 818 is different ~~between-at~~ in the monitor through mode and the recording mode. That is, In other words, at the A/D converter 816, the cycle of the A/D conversion is different ~~between-at~~ in the monitor through mode and the recording mode.

Please amend the paragraph beginning at page 8, line 24, as follows:

The image memory 819 stores the pixel signals applied the A/D conversion at the A/D converter 816. The DSP 821 executes color processes such as complementary color/primary color conversion, a white balance process, a gamma correction to the pixel signals stored in the image memory 819 based on a DSP clock signal outputted from the frequency divider 818. And with these processes mentioned above, the DSP 821 generates primary color signals and outputs the generated primary color signals to the I/F circuit 822. The I/F circuit 822 converts the primary color signals outputted from the DSP 821 to a format with which the primary color signals are recorded in ~~[[the]]~~ memory card 823 or a format with which the primary color signals are recorded ~~[[in]]~~ on the hard disk 827 connected to the computer 824.

Please amend the paragraph beginning at page 9, line 10, as follows:

The DIA converter 831 converts the primary color signals outputted from the DSP 821 to analog signals. The monitor driver 832 converts the primary color signals converted to the analog signals at the D/A converter 831 to, for example, signals of the NTSC system, and outputs this converted signals to the TV set 833 through the video out connector 834. The LCD diver 835, based on a clock signal outputted from the clock generator 837, applies a process to make the primary color signals outputted from the DSP 821 display on the LCD 836. The LCD

Serial No. 09/707,815
Docket No. NEC DP-689
Amendment B

836 displays the pixel signals outputted from the CCD 812 ~~[[at]]~~ in real time as the moving image ~~[[at]]~~ in the monitor through mode.

Please amend the paragraph beginning at page 9, line 22, as follows:

At ~~[[this]]~~ the monitor controlling apparatus of the electronic still camera having the structure mentioned above, the cycle for executing the A/D conversion at the A/D converter 816 is ~~made to be~~ different between the monitor through mode and the recording mode. And, at the monitor through mode, the A/D converter 816 applies the A/D conversion to about only a half of the total pixel signals outputted from the CCD 812.

Please amend the paragraph beginning at page 10, line 3, as follows:

That is, at this monitor controlling apparatus of the electronic still camera, ~~in case that~~ when the pixel signals are displayed on the LCD 836, about the half of the total pixel signals are thinned out ~~[[at]]~~ in the monitoring through mode, and about the half of the total pixel signals are displayed on the LCD 836. With this, the power consumption of the total system is reduced.

Please amend the paragraph beginning at page 10, line 7, as follows:

At the electronic still camera, ~~[[a]]~~ high definition image quality is required ~~as high as possible~~ for ~~[[an]]~~ image recording on a recording medium or for an image processed at a personal computer. On the other hand, it is not required that an image ~~[[to be]]~~ displayed on an LCD ~~is not required to~~ be a high definition image quality, generally, it is sufficient that the image has about 200000 pixels.

Please amend the paragraph beginning at page 10, line 11, as follows:

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Serial No. 09/707,815
Docket No. NEC DP-689
Amendment B

However, at the conventional electronic still cameras shown in Figs. 1, 2, and 3, the process to display an image on the LCD is the same as the process making the image record on the recording medium and the process to process the image in the personal computer. Therefore, the power consumption ~~at the process~~ when making the image display on the LCD becomes large, ~~being exceeded the necessity.~~

Please amend the paragraph beginning at page 10, line 16, as follows:

For example, at an electronic still camera mounted a CCD having about mega-pixels as a solid state image taking device being high definition, an image processing is ~~execute-d~~ executed by a high bit number being about 10 bits for the image to be displayed on the LCD.

Please amend the paragraph beginning at page 11, line 3, as follows:

However, at the monitor controlling apparatus of the electronic still camera shown in Fig. 4, ~~[[after]]~~ once thinned out about the half of the total pixel signals outputted from the CCD 812 remain. And, at the DSP 821, ~~[[a]]~~ color processing is applied to about the half of the total pixel signals. Consequently, many alias color signals are generated in the image to be displayed on the LCD 836, and there is a problem that the image quality is deteriorated remarkably.

Please amend the paragraph beginning at page 11, line 8, as follows:

At the DSP 821, generally, the color processing is executed by using plural pixel signals. Therefore, ~~in ease that~~ where the color processing is executed by using a part of the pixel signals outputted from the CCD 812, and when each of the pixel signals is made to correspond to a subject image to be taken, each of the pixel signals is positioned at the different position on the subject to be taken. Consequently, the correlation among the pixel signals used

Serial No. 09/707,815
Docket No. NEC DP-689
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for the color processing becomes small, and many alias color signals are generated in the image to be displayed on the LCD 836.

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